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EXPEDITE**INFORMATION REPORT INFORMATION REPORT****CENTRAL INTELLIGENCE AGENCY**

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COUNTRY USSR**REPORT**

SUBJECT Central Energetics Installation
Trust and Restricted Thermal Electric
Power Plants in the USSR

DATE DISTR. 7 April 1961**NO. PAGES** 3**REFERENCES** RD 50X1-HUM

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VALUATIONS ARE DEFINITIVE. APPRAISAL OF CONTENT IS TENTATIVE.

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Location of the TsentroEnergoMontazhTrest

The headquarters of the Central Energetics Installation Trust (Tsentro-EnergoMontazhTrest) was located in Moscow, on Okhotnyy Ryad near Dzerzhinskiy square. The telegraph address was f EnergoMontazh, Moscow. The Trust was subordinate to the Ministry of Electric Power Stations, which merged in/about 1950 (sic) with the Ministry of Construction of Electric Power Stations. The Trust was subordinate to the Ministry through the Glavka (Central Board) of the Ministry which assigned work to the Trusts. Subordinate to the Central Board were various trusts, such as: Donbass-EnergoTrest - total about 1,000 employees; AlmaAtaEnergoTrest - organized in 1954-1955, (number of personnel unknown) which installed power plants in Omsk, Tomsk, and Central Asia (installation previously handled by the TsentroEnergoMontazhTrest); LeningradEnergoTrest - about 1,000 employees; KuzbassEnergoTrest - about 1,000 employees; and the TsentroEnergoMontazhTrest, which was the first and largest of all trusts. Most of the administrative-technical staffs of the other trusts were made up of former TsentroEnergoMontazhTrest staff members.

Installation of Power Plants

2. Some of the regions where power plants were installed were: Krasnyy Sulin, terminated in 1949; Orel, terminated in 1950; Stupino, terminated in 1955;

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Kuybyshev, terminated in 1950; Penza, terminated in 1956; Groznyy, date unrecalled; Dnepropetrovsk, terminated in 1954 and transferred to Donbass; Gorkiy-Auto Factory (GAZ) power plant, terminated in 1954; Krasnodar, terminated in 1953; Zaporozhye, terminated in 1954 and transferred to Donbass; and in Tula, Karaganda, and Novosibirsk [redacted] Some field teams were transferred to other trusts, such as Omsk and Tomsk as stated above. In 1956 the TsentroEnergMontazhTrest teams were engaged in the installation of, or in enlarging the capacity of power plants in Kirovsk, Serov, Salavat, Kemerovo, Ufa, Termolayevka (N 52-47, E 55-47), Magnitogorsk, Glazov, Kurgan, Saratov, and Kirov. Exact dates of work conducted in the above plants not recalled. The TsentroEnergMontazhTrest installed 25,000, 50,000, and 100,000 Soviet-made kilowatt turbines in China, Poland, Bulgaria, Rumania, and Hungary. Top technical personnel were sent along with the turbines and auxiliary parts, to accomplish the actual installation of turbines in these countries. Three or four months time was required to install a turbine, three or four months to install the boilers and auxiliary equipment, and following the completion of the work, engineers remained at the work site for three or four months in order to insure the power plant's efficient operation.

Restricted Power Plants in the USSR

3. The following power plants were considered restricted: Kirovsk, Tets No. 2 in Penza, Kirov, Serov, Kemerovo, Tomsk, Kurgan, Aktyubinsk, Angarsk, Verkhny Tagil, Nizhnyaya Tura, Ufa, Yermolayevka, Glazov, Omsk, and Novosibirsk. [redacted] 50X1-HUM

[redacted] These restricted plants [redacted] were not subordinate to the Ministry of Electric Power Stations, but to other Ministries, such as the Aviation, Aviation Industry, etc. Most of these plants were in restricted zones, and their leading administrative-technical personnel had to undergo a strict security clearance, which required up to six months investigation time. [redacted] many Soviet nationals, were not cleared for work in these restricted plants. [redacted] 50X1-HUM

[redacted] no matter how urgent it was to install a power plant in a restricted zone, the work had to wait until the necessary personnel were cleared by the MVD. [redacted] these above-named restricted power plants were either for secret armament production or nuclear energy [redacted] 50X1-HUM

[redacted] no one was allowed to talk about these plants. 50X1-HUM

Nuclear Energy

4. [redacted] prior to 1956 there was only one 5,000 kilowatt nuclear energy station in Obninskoye near Moscow. This station in Obninskoye was installed by TsentroEnergMontazhTrest, and [redacted] it was very likely that all nuclear energy stations would be installed by this Trust since it was the most experienced power installation organization in the USSR. Prior to December 1956, this Trust constructed no other nuclear energy stations. 50X1-HUM

Miscellaneous, Security

5. All students, upon entering the Moscow Energetics Institute had to sign a pledge never to discuss anything learned there. Students, upon graduation from the Institute were assigned to various jobs, without consideration of personal wishes of the graduating student. [redacted] 50X1-HUM
- [redacted] there was a great shortage of qualified engineer-technical personnel for power plants. The plans to expand existing power plants and to build new power plants, especially in Siberia, and the annually increasing electrical consumption needed annually more technicians than were available.

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[REDACTED]

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6. [REDACTED] complete report, including information on: personnel and organization of the Trust, on the Leningrad Metal Plant, and the Kharkov Pipe and Generator Plant [REDACTED]

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[REDACTED]

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[REDACTED]

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CENTRAL ENERGETICS INSTALLATION TRUST AND RESTRICTED THERMAL
ELECTRIC POWER PLANTS IN THE USSR

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1.

Organization of the TsentroEnergoMontazhTrest

- 2.1 The headquarters of the Central Energetics Installation Trust, was located in Moscow, on Okhotnyy Ryad near Lzerzhinskiy square. The telegraph address was: Energo Montazh, Moscow. The Trust was subordinate to the Ministry of Electric Power Stations, which merged in/about 1950 (sic) with the Ministry of Construction of Electric Power Stations. The Trust was subordinate to the Ministry through the Glavka (Central Board) of the Ministry which assigned work to the Trusts. Subordinate to the Central Board were various trusts, such as: Donbass Energo Trest - total about 1,000 employees; Alma Ata Energo Trest - organized in 1954-55, (number of personnel unknown) which installed power plants in Omsk, Tomsk and Central Asia (installation previously handled by the TsentroEnergoMontazhTrest); Leningrad EnergoTrest - about 1,000 employees; Kuzbass EnergoTrest - about 1,000 employees; and the Tsentro EnergoMontazhTrest, which was the first and largest of all trusts. Most of the administrative-technical staffs of the other trusts were made up of former TsentroEnergoMontazh-Trest staff members.

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3. The director of the TsentroEnergMontazhTrest was Viktor Petrovich Bannik / Vannik? [redacted]

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Boris Alekseyevich Golubov [redacted] was the chief of the mechanical equipment section of TsentroEnergMontazhTrest. [redacted]

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Leonid Nikitovich Pravdik [redacted] was an engineer who installed power stations for the TsentroEnergMontazhTrest.

Lev Vasilyevich Steklov [redacted] was an engineer who installed power stations for the TsentroEnergMontazhTrest.

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Doris Ivanovich Reznikov [redacted] was a projects-technological engineer, and Vladimir Glich Saprikin [redacted] was foreman for turbine installation for the TsentroEnergMontazhTrest.

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4. The Trust employed 5,000-7,000 workers, of whom one percent were engineers, one percent were experienced power plant installation foremen, and one-half percent highly qualified power plant technicians and draftsmen. All other workers, boiler personnel, pipe layers, electricians, machinists, and turbine personnel were highly qualified skilled workers. All leading administrative-technical personnel were transient workers; they could work one year in Tomsk, the next in Groznyy, etc.

5. The TsentroEnergMontazhTrest was subdivided into the following sections: the planning and designing office (proyektnaya kontora) with about 50 engineers, technicians, planners, copyists and draftsmen; the mechanical equipment section (incumbent Golubov described above) with its own plant, employing about 500 workers; and the turbine section - number of personnel unknown; the boiler section - number of personnel unknown; and the installation section [redacted]. The Trust had a chief, a deputy chief, production engineer, bookkeeping, administrative and technical offices, and field teams. The field teams used for installation of power plants were called "uchastki" and had from 300 to 1,500 workers. Once a field team installed a new power plant in a specific location it moved to a different region. Each field team was a complete, independent unit, administratively and technically, and consisted of: one team chief - an engineer; one chief engineer; one planning engineer; one chief for turbine installation (an engineer); one chief for boiler installation (an engineer); one administrative chief; skilled workers to install turbine pipes, boilers, generators, transformers, auxiliary equipment, chemical water purification systems, etc. All qualified personnel were from the Moscow headquarters, but wherever possible, local electricians and mechanics were hired for the duration of a job.

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Installation of Power Plants

6. Some of the regions where power plants were installed were: Krasnyy Sulin, terminated in 1949; Orel, terminated in 1950; Stupino, terminated in 1955; Kuybyshev, terminated in 1950; Penza, terminated in 1956; Groznyy, date unrecalled; Dnepropetrovsk, terminated in 1954 and transferred to Donbass; Gorkiy-Auto Factory (GAZ) power plant, terminated in 1954; Krasnodar, terminated in 1953; Zaporozhye, terminated in 1954 and transferred to Donbass; and in Tula, Karaganda, and Novosibirsk. Some field teams were transferred to other trests, such as Omsk and Tomsk as stated above. In 1956 the TsentroEnergMontazhTrest teams were engaged in the installation of, or in enlarging the capacity of power plants in Kirovsk, Serov, Salavat, Kemerovo, Ufa, Yermolayevka (N52-47 #, E55-47 #), Magnitogorsk, Glazov, Kurgan, Saratov and Kirov. Exact dates of work conducted in the above plants not recalled.
7. The TsentroEnergMontazhTrest installed 25,000, 50,000 and 100,000 Soviet-made kilowatt turbines in China, Poland, Bulgaria, Rumania and Hungary. Top technical personnel were sent along with the turbines and auxiliary parts, to accomplish the actual installation of turbines in these countries.
8. Three or four months time was required to install a turbine, three or four months to install the boilers and auxiliary equipment, and following the completion of the work, engineers remained at the work site for three or four months in order to insure the power plant's efficient operation.

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Restricted Power Plants in the USSR

9. The following power plants were considered restricted: Kirovsk, Tets No. 2 in Penza, Kirov, Serov, Kemerovo, Tomsk, Kurgan, Aktyubinsk, Angarsk, Verkhny Tagil, Mikhayla Tura, Ufa, Yermolayevka, Glazov, Omsk, and Novosibirsk. These restricted plants were not subordinate to the Ministry of Electric Power Stations, but to other Ministries, such as the Aviation, Aviation Industry, etc. Most of these plants were in restricted zones, and their leading administrative-technical personnel had to undergo a strict security clearance, which required up to six months investigation time. many Soviet nationals, were not cleared for work in these restricted plants. no matter how urgent it was to install a power plant in a restricted zone, the work had to wait until the necessary personnel were cleared by the MVD. these above named restricted power plants were either for secret armament production or nuclear energy one was allowed to talk about these plants

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Research and Experimental Work

10. Research for the TsentroEnergMontazhTrest was carried on by:

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etc

- a. Moscow Energetics Institute [redacted]. Sheglayev, (fnu) who received a Stalin Prize of 100,000 rubles in 1950, conducted the chair on steam turbines. He was also a consultant for the Leningrad Metal Plant which manufactured turbines (see below), the Kharkov Turbine Plant, and the Central Boiler-Turbine Experimental Institute in Moscow.
- b. Central Boiler-Turbine Experimental Institute in Moscow.
- c. Leningrad Metal Plant. Prior to 1953 this plant (Leningradskiy Metallicheskiy Zavod-LMZ) was the only plant in the USSR which manufactured steam turbines. This plant had its own research laboratory. In 1956 it was the largest turbine plant, and the only one to manufacture turbines of 100,000 kilowatts or more. LMZ produced about 20 turbines each of 100,000 kilowatt capacity in 1956. LMZ also manufactured gas aggregates, of not less than 12,000 kilowatt capacity, and turbine auxiliary equipment. LMZ produced hydroturbines for Stalingrad (1,500,000 kilowatt capacity); for Kiybyshev, (2,250,000 kilowatt capacity); and for Bratskaya (3,000,000 kilowatt capacity), GES(stations). In 1956 LMZ began to manufacture steam turbines of 150,000 kilowatt capacity, and experimented with a 200,000 kilowatt steam turbine. [redacted] the 200,000 steam turbine was a prototype only, and [redacted] three to three and one-half years would be required from the drafting of blueprints stage to serial production of such a unit, estimated as follows: one-half year for planning and drafting; one year for manufacture of a prototype; one-half year for factory testing; one-half year to one year for installation; and one-half year for experimental operation. In 1956 plans were in the drafting stage for a 300,000 kilowatt steam turbine.

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Suppliers of Power Plant Equipment

11. During WW II the Leningrad Metal Plant was evacuated to Sverdlovsk. In or about 1948 the LMZ returned to Leningrad, but the plant in Sverdlovsk remained, under the name "Sverdlovsk Mashino Stroitelnyy Zavod" and continued to manufacture steam turbines up to 50,000 kilowatt capacity.
12. The Kharkov Pipe and Generator Plant (Kharkovskiy Trubostroitelnyy i Generatornyy Zavod) manufactured steam turbines up to 50,000 kilowatt capacity. It was the only plant in the USSR which produced generators for its steam turbines. During WW II this plant was evacuated to Barnaul, and while in 1947-48, it was re-established in Kharkov, the plant at Barnaul remained and continued to manufacture steam turbines up to 50,000 kilowatt capacity. The Elektrosila Plant in Leningrad manufactured all electrical parts for power plants, such as generators, transformers, and armatures.

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Past and Present Operational Difficulties

13. In 1948-1951 almost all turbines in the USSR were of foreign make, most of which were German turbines removed at the end of WW II from German power plants. As there were no instructions, schematic drawings or replacements for the captured German turbines, it was quite difficult to operate them, and source spent many months on automatic regulation and proper assembly of these turbines, boilers and generators. After 1949-1950 Soviet factories began manufacturing steam turbines, and many types were developed among the first serial produced steam turbines. These difficulties were overcome 1951-1953. In 1956 the USSR planned to modernize and increase the capacity of existing power plants, rather than build new power plants. Accordingly new turbines were added to those already in operation; the old turbines were not removed, but continued to operate. The trend was for large turbines (50,000; 100,000; 150,000 and 200,000 kilowatt) because the advantages for one large turbine of 100,000 kilowatt in comparison to four 25,000 kilowatt turbines were: less housing and plant space, less metal per unit, more economic utilization of steam, less capital investment, and less servicing personnel.
14. Construction of large turbines and boilers presented many difficulties. At a temperature of 500 degrees centigrade, at 3,000 revolutions per minute, the structure of metal underwent unexpected composition changes. Metal aged rapidly in large boilers. It was difficult to concentrate the heat on the heating surface of large boilers, and it was difficult to combine two boilers and unite all piping and auxiliary equipment. Transportation from the factory to the final destination of the turbines, generators, boilers presented problems. After the final, complete assembly, the turbines did not perform as envisaged, and had to be run on an experimental basis for three to six months requiring many regulations and changes.

Miscellaneous, Security

15. All students, upon entering the Moscow Energetics Institute had to sign a pledge never to discuss anything learned there. Students, upon graduation from the Institute were assigned to various jobs, without consideration of personal wishes of the graduating student.

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there was a great shortage of qualified engineer-technical personnel for power plants. The plans to expand existing power plants and to build new power plants, especially in Siberia, and the annually increasing electrical consumption needed annually more technicians than were available.

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Nuclear Energy

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16.

[redacted] prior to 1956 there was only one 5,000 kilowatt nuclear energy station in Obninskoye near Moscow. This station in Obninskoye was installed by Tsentr-EnergoMontazhTrast, and it was very likely that all nuclear energy stations would be installed by this Trust since it was the most experienced power installation organization in the USSR. Prior to December 1956, this Trust constructed no other nuclear energy stations.

Planned Expansion and Fuel Conversion

17.

[redacted] the Tomsk, Omsk, and Yermolayevka Power Stations would be greatly expanded. [redacted] it was planned to convert two power plants, one in Kashira, capacity 400,000 kilowatts and one in Shaturskaya, capacity 500,000 kilowatts from peat fuel to gas.

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